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ABSTRACT

The effect of training programs on the income and employment duration of low-income residents of Chicago has been examined through data drawn from the 1969 Urban Employment Survey, which reflects differences in such factors as age, race, sex, level of education, occupation, and industry of employment and contains information about participation in conventional and poverty-type training programs. The study indicated high correlation between income and empolyment and level of education; the earnings of blacks and of women were substantially lower than of white males (after controlling for level of educational attainment, occupation, and industry of employment). Participation in conventional and poverty-type training programs had not raised trainees' income above those of nonparticipants and had no significant effect upon employment duration. However, it cannot be concluded that participants received no benefit, since comparisons were not made for pre- and post-training earnings and employment duration. Two major areas in need of emphasis were identified as the increasing of skill levels and eliminating racial barriers to upward mobility. Thus far, training programs have not proven an adequate substitute for formal education, and further research is needed on the restructuring of school programs to increase the proportion of students completing high school. (EA)

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Reasons for Income and Employment Differentials in Chicago

Gerti L. Brunner

A Report prepared for

THE ILLINOIS INSTITUTE FOR SOCIAL POLICY

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PREFACE

This report examines the impact of training programs and other factors on the earnings and employment of low-income residents of Chicago. The study focuses on the extent to which training programs have improved the earnings and employment stability of adult residents in poverty areas. The study also examines the effectiveness of these programs in raising the number of weeks worked during the year and the level of earnings.

This report was prepared for the Illinois Institute for Social Policy.

SUMMARY

The effect of training programs on the incomes and employment duration of low-income residents of Chicago is examined in this report. In doing this, the study adjusts observed incomes and employment patterns to reflect differences in such factors as age, race, sex, level of education, occupation, and industry of employment, and measures the impact of training programs on individual earnings and employment stability.

The data utilized in the study are drawn from the 1969 Urban Employment Survey. It identifies the various socioeconomic characteristics of the metropolitan population mentioned above and also contains information about participation in both traditional and poverty-type training programs. The survey thus provides a means for estimating the impact of training program participation on income and earnings and on labor force participation.

The study suggests several conclusions about the impact of conventional and poverty-type training programs. Participation in these programs has not raised the incomes of the trainees above those of nonparticipants. Neither has it had a significant effect upon the duration of their employment. However, since the study does not compare pre- and post-training earnings and employment duration, it cannot be concluded that the participants have received no benefit. This is particularly true since the programs appear to facilitate entry into the labor force, especially for those participants with less than a completed high school education. All that can be said is that participants appear to receive the same income and be employed for the same length of time as nonparticipants.

The study also indicates that income and employment are highly correlated with the level of education. The high school graduate has a significantly higher earned income than his less educated cohort. This finding is not unique to this study and readily leads to the frequently stated conclusion that one of the major policies should be to increase the retention power of high schools. This recommendation is

too broad to be useful. Much additional work is needed to establish the type of curriculum that would lead to increased retention and increased employability.

The third conclusion, again not unique to this study, is that the earnings of blacks and of women are substantially lower than those of white males after controlling for level of educational attainment, occupation, and industry of employment. With respect to females, particularly white women, their frequently intermittent labor force participation and employment may be one of the reasons for their lower earnings. The differentials between black and white earnings are largely the result of racial discrimination. The findings suggest that future research must concentrate upon increasing the mobility of black workers in two respects: movement into higher paying industries and greater upward mobility within any given career ladder.

In sum, policies designed to increase the earnings of the poor population of Chicago should focus on two major areas: increasing their skill levels and eliminating racial barriers to upward mobility. So far, training programs have not proven an adequate substitute for formal education. Whether they can be restructured or whether, alternatively, school programs can be changed to increase the proportion of students completing high school should be the subject of further research. However, no educational reform of any kind will have much effect upon the retention rate of students in either high school or training programs if the monetary incentives for acquiring skills are lacking. Occupational upward mobility is necessary in providing motivation for such retention.

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I. INTRODUCTION

This report examines the effect of training programs and other factors on the earnings and employment of low-income residents of Chicago. The data used in this study are drawn from the 1969 Urban Employment Survey. The primary purpose of this survey was to obtain more information about the barriers to employment experienced by low-income citizens. Among the questions asked by the survey were queries about participation in training programs, including both traditional vocational education and less traditional programs designed especially for the poor.

To isolate the effect of training on employment and earnings, one must allow for the effect of other factors that may also influence the job status of the poor. Among these are age* and formal education.† Income and employment stability generally increase with increases in both variables. In addition, a person's occupation and industry of employment will affect his income and the duration of his employment. Certain physical characteristics also have an impact on an individual's employment status. The earnings of women are generally lower than the earnings of men. One reason for this is that women tend to participate in the labor force with less regularity than men. However, women also tend to be employed in fewer occupations. A person's race may also affect his income and job status. Nonwhites earn less than whites, in part, because they are restricted to lower paying jobs. The influence of each of these factors must be taken into account in evaluating the effect of formal training programs on earnings and employment.

One must also allow for the possibility of interaction between formal education and training programs. Certain types of skill training

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*Age is primarily a surrogate for experience.

†There is an extensive body of literature on life-time income streams by level of education and also by race. For some of the most important of these, see Refs. 1-3.

Education has also been construed as investment in human capital and different rates of return have been estimated for whites and nonwhites. See Refs. 4 and 5.

require minimum levels of education; they may, for example, be predicated on the trainee's ability to read and compute. For this reason, many of the poverty programs established in the 1960s were not intended primarily to provide skills but to remedy the educational deficiencies of persons who did not attend or complete high school. Hence, the effect of the training programs has to be evaluated with respect to the level of formal education of the participant and the type of program involved.

This study is concerned with identifying the principal determinants of earned income and weeks worked by low-income residents of the Chicago metropolitan area. The study uses multivariate statistical analysis to identify the separate effects of age, race, sex, level of education, industry and occupation, and participation in various training programs on individuals' earnings and employment stability. Section II discusses the data base used in the study and characteristics of the different training programs examined. Section III examines some of the characteristics of the low-income sample population: age, education, training program participation, and labor force status. Section IV discusses the statistical analysis used to estimate the effect of training programs and other factors on earnings and number of weeks employed. Finally, Sec. V summarizes the conclusions and policy implications of the study.

II. THE DATA BASE

This section describes the sample survey utilized in the study and discusses the various training programs that are examined.

THE URBAN EMPLOYMENT SURVEY

The Urban Employment Survey (UES) was conducted by the Bureau of the Census for the Department of Labor.* It was limited to the Concentrated Employment Program (CEP) areas of six cities: Atlanta, Chicago, Detroit, Houston, Los Angeles, and New York. In two cities, Atlanta and Detroit, non-CEP areas were also included in the sample. Approximately 70 households were interviewed in the six CEP and the two non-CEP areas every week, or a total of 3,500 households in four cities and 7,000 each in Atlanta and Detroit between July 1968 and June 1969.

The interviewer talked with the household head and each member who was 16 years of age or older once during the fiscal year 1969.† The data were then accumulated for all persons queried during the entire year.

The CEP areas were established by the Department of Labor in 1967. Their purpose was to bring together, under one sponsorship, all employment programs in regions containing the highest proportion of disadvantaged persons within a city or a rural community. The UES covers only six of the city areas and none of the rural areas. Within a given city, the CEP areas are not necessarily homogeneous. They do not consist solely of poor census tracts; nor do they necessarily include the poorest tracts in each of the cities. Their selection was based upon the following criteria:

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*For a more detailed discussion of the UES, see Ref. 6.

†This differs from the technique used in the Current Population Survey (CPS). Here, information is normally obtained from the housewife. Although the housewife was interviewed in the UES when other household members were not available, to the extent possible, information was obtained from each household member separately.

> The distribution of resources and the choice of target areas for the CEP's have been determined by a number of priorities. The selection of the urban areas was based, first, on the extent of unemployment and subemployment in these slum neighborhoods and, second, on an estimation of the local capability to mount a CEP [7].

Hence, the surveyed areas are not likely to be representative of a city as a whole. Most, but not all parts of each area, are poor and contain large minority populations.

The geographical focus of our study is Chicago. However, because of the problem of confidentiality,* the research tape for Chicago alone could not be released. The data file has, therefore, been merged with that for Detroit. Among the cities included in the Urban Employment Survey, Detroit was the obvious choice for merging. It resembles Chicago most closely in income distribution of all families as well as of black families. The medium ages of the populations are very similar as are the characteristics of black and white migrants into both metropolitan areas.† However, the merging of the files introduced certain biases. Average weekly manufacturing wages are about 22 percent higher in Detroit than in Chicago. A larger proportion of manufacturing workers in Detroit are employed than is the case in Chicago, particularly in the durable goods industry. Finally, the inclusion of the non-CEP area in the Detroit sample increases income generally. This is particularly true for white persons, who constitute a greater percentage of the residents in the non-CEP areas than within the CEP areas. Two-thirds of the households contained in the merged file belong to CEP areas, and one-third to the non-CEP Detroit area.

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*The Bureau of Labor Statistics has published a number of articles on information contained in the UES file. These articles provide information by city, based on weighted cross-tabulations. However, the research files containing all the characteristics of any person in the sample can be released only if the population from which the sample was drawn is in excess of 250,000 persons. Otherwise, the release violates the confidentiality requirements of the Bureau of the Census. The population of the Chicago CEP area does not meet this requirement. Therefore the Chicago tape is available only in merged form.

†Comparisons of characteristics of black and white migrants into Detroit and Chicago are based upon a forthcoming Rand report by I. N. Fisher, *The Impact of Migration on the Chicago Metropolitan Population.*

The UES tape presents information gathered at two levels: the household and adult members of households who are 16 years and older. Our study is limited to an examination of characteristics of the individual rather than the household. These characteristics include age, race, sex, level of education, labor force status in the week preceding the interview, occupation, industry of employment, and number of weeks worked and earnings during the 12 months preceding the interview.

TRAINING PROGRAMS

The training programs covered by the UES are: vocational training in high school, trade school, or junior college; technical training in the Armed Forces; apprenticeship training; and other training programs. This last category consists primarily of programs focusing on the disadvantaged. Included in it are: Upward Bound, the Job Corps, the Neighborhood Youth Corps, and other federal, state, local, and private programs for the poor.

Vocational training in public and private institutions assumes a number of forms. Public school training is accessible not only to students still in high school, but also to adults interested in improving existing skills or acquiring new skills. Tuition-free community colleges also teach a variety of vocational skills. Private trade and business schools offer programs ranging from short courses in upholstering to longer and more expensive courses for licensed practical nurses and dental technicians. In general, private trade and business schools are distinguished from vocational training in public institutions by (1) payment of tuition, (2) greater flexibility in scheduling courses throughout the year and at different times during the day, (3) greater range of subject matter, and (4) frequently, referral services, which may or may not lead to placement. Private and public schools may also differ with respect to performance as measured by grade of completion. A high school or junior college student automatically increases his grade completion as he progresses through the program. There is no equation of progress with grade completion in the nonpublic school vocational training programs. These private vocational training programs also exercise considerable discretion and flexibility in their

entrance requirements. Enrollment usually depends on the program's assessment of the quality of the applicant and not exclusively on the possession of a high school diploma.

Technical training in the armed forces is widespread, particularly in the Air Force and the Navy. The skills taught range from cooking and baking to electronics. Course length varies with the intricacies of the skill. The ability of the recruit to obtain a specific type of training not only depends upon the needs of the service at the time of his entry, but also upon his aptitude score. The more complicated skills require a higher aptitude rating than do the less complicated skills. The more intricate skills also command a higher reward in the civilian economy. There is some relationship between the level of formal schooling and training in the services. For example, in recent years the Air Force has, for the most part, enlisted high school graduates. For this reason, much of the technical training provided by the Air Force, at least, is available only to relatively educated segments of the population.

Apprenticeship training is an old and well-established form of skill acquisition. Two characteristics distinguish it from other forms of training: Apprentices are already employed and an apprenticeship program is often a means of entering a restricted labor market [8,9]. The apprentice receives a wage less than that of the regular worker. Although his apprenticeship is no assurance of post-training employment, it provides him with contacts and eases his entry into a labor market where a union has some control over the number of workers and job referrals. Therefore, the monetary returns of this type of training reflect not only a return on the acquisition of a skill, but also in holding onto a job that is protected by restrictive union practices. The length of apprenticeship training varies from trade to trade and may be as short as one year and as long as four years. There is substantial variation in the standards used to select apprentices from applicants. There is also variation among the trades in the ratio of those completing the program to those participating in it. In many occupations, it is possible to continue working in a trade without finishing the apprenticeship program and still earn journeyman's wage rates [10].

"Other" training programs listed in the UES file contain, in addition to the poverty programs, some programs that are not clearly specified. Two of these programs, "private and business programs" and "unknown or other programs," do not appear to encompass any of the training measures designed specifically for the disadvantaged during the 1960s. The former probably consists for the most part of the entry-level training and upgrading normally provided by a private business to its own employees. The latter has the largest single number of participants. However, the characteristics of participants are more or less the same as for the labor force as a whole. It would appear, therefore, that this rather nebulous category consists more of traditional rather than poverty-type training programs.

Four poverty training programs are identified by name: Upward Bound, the Job Corps, the Neighborhood Youth Corps, and Community Action. All but the Community Action program are designed specifically for disadvantaged youth. The Job Corps is a more structured program than the other two. Its participants live in residential centers and form a community unto themselves for the duration of the training. The Neighborhood Yough Corps is specifically designed to encourage youth to complete their high school educations and not to enter the labor market prematurely and ill equipped. Upward Bound is designed to promote college attendance for disadvantaged youth without forcing the schools to lower their admission standards. Community Action programs employ and train the disadvantaged within their own community in centers designed to provide comprehensive manpower services financed by different levels of government and by private sources. They are not limited to working with the youth. The "other" category also includes various federal, state, and local programs. The most significant of the federal programs are those established under the Manpower Development and Training Act calling for institutional and on-the-job training.

Publicly funded training programs for the disadvantaged offer many services other than provision of vocational skills. Among these services are counselling, health and day care, prevocational training, remedial education, and job referral. An unpublished report prepared by the Chicago Cooperative Area Manpower Planning System (CAMPS),

forecasting needs and services for FY 1971, indicates that only about a quarter of the training slots were intended specifically for vocational training. By and large, the small programs (small in both the numbers of enrollees and levels of funding) tend to provide relatively narrow, job-related forms of skill training.

All training program participants were asked when they had participated in the program, for what occupation they had trained, and whether they had used the training in subsequent employment. Questions about completion varied from program to program. Persons enrolled in high school, trade school or junior college vocational programs were classed as participants only if they had completed the program. The same was true of men who had undergone training in the Armed Forces. In contrast, participants in all other programs were asked, first, whether they had participated and, second, whether they had completed the program. Except where the phrasing of the survey question makes it impossible, all participants, whether completers or not, have been included in this study.* Those still participating were excluded.

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*It is conceivable that the inclusion of those who participated in, but did not complete, training programs biases the earnings of trainees downward. However, separate tabulations of earnings of completers and noncompleters did not show a consistent pattern of higher earnings for the former. Since the regression analysis includes only persons working full time, it is quite possible that noncompleters found the training offered unnecessary because they could obtain a job without it.

III. THE CHARACTERISTICS OF THE SAMPLE POPULATION

We segment the UES sample of persons 16 years and over into four race-sex groups: white men, nonwhite men, white women, and nonwhite women. The nonwhite women are the largest single group, accounting for 35 percent of the total. Sixty-five percent of the sample is nonwhite. The four groups differ with respect to age, level of education, labor force participation, occupation, and type of training program. Since the nonwhites in the sample are located mostly in the CEP areas of Chicago and Detroit, it can be assumed that they are representative of the poor population of the two cities. The same cannot be said for whites of whom a larger proportion in the sample is drawn from the non-poverty area of Detroit. The comparisons, therefore, are approximate and are merely designed to provide an overview of the sample population characteristics with special emphasis on the two nonwhite groups.

AGE, RACE, AND EDUCATION

White residents are significantly older than nonwhite residents. The median age of white men is 46 years; of white women, 47 years. Nonwhite men, on the other hand, have a median age of 37 years and nonwhite women, 36 years. About one-fourth of the white population is 60 years or older; only 15 percent of the nonwhite population is this old.

In general, the sample population has a low level of educational attainment. More than half of the whites and more than 65 percent of the nonwhites have not completed high school. Among whites, 34 percent of the females and 27 percent of the males have high school diplomas. Almost 14 percent of the females and 18 percent of the males have attended college without necessarily completing it. Among nonwhites, only 26 percent of the females and not quite 22 percent of the males have high school diplomas. For nonwhites of both sexes, college attendance amounts to less than 8 percent of the sample.

The level of educational attainment is negatively correlated with age. The older a person is, the less likely it is that he has completed high school. This is true for all four groups, but is particularly evident for white males.

LABOR FORCE PARTICIPATION

Table 1 identifies labor force participation for each of the four groups according to their level of education and median age. Labor force status is measured for the week preceding an interview; it does not necessarily reflect the person's status throughout the preceding 12 months.* The category, "part-time and unemployed," includes those voluntarily holding part-time jobs as well as those involuntarily working part time or unemployed because of economic conditions. For all groups except nonwhite men, those voluntarily working less than 35 hours a week constitute the largest single component of part-time and unemployed workers. Among nonwhite men, the unemployed are predominant.

For all four race-sex groups, the proportion in the labor force and full-time employed increases with the level of education through high school graduation. However, men with higher levels of education do not perform as well as men with no more than a high school diploma. In part, this is a reflection of the fact that some of the highly educated are still in school and, therefore, not in the labor force. For women, the proportion in the labor force and full time employed increases with education up to and including the highest level. At all levels of educational attainment, a higher proportion of nonwhite women participate more in the labor force and more often work full time than white women.

Labor force participation declines with age as people retire. Young people are in the labor force, seeking employment. However, among them the proportion who are unemployed or working only part time is relatively high. This is particularly true for nonwhite high school dropouts.

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*Separate cross-tabulations indicate that most persons who were employed full time during the preceding week were also employed full time during the preceding year. About 10 percent of the persons not in the labor force during the survey week were in the labor force some time during the year. Stambler has pointed out that aggregating the results of survey weeks will tend to overstate unemployment and understate full-time employment because doing this reflects seasonal variations also found in the first, and fifth months of the CPSs [6, p. 52]. Our tabulations bear out his contention. For this reason, they probably yield conservative estimates of labor force participation and full-time employment.

Table 1

LABOR FORCE PARTICIPATION BY LEVEL OF EDUCATION, RACE, AND SEX

Labor Force Status	Grade Completed (Percentage)				Total Population	Median Age (Years)
	0-8	9-11	12	13+		
White Males						
NILF[a]	43.3	21.3	14.0	17.8	25.3	67.0
Full time	49.3	63.9	79.1	70.4	64.8	44.5
Part time & unemployed	7.4	14.8	6.9	11.8	10.0	24.1
Nonwhite Males						
NILF	29.5	17.2	8.1	12.6	19.5	55.0
Full time	61.2	65.5	82.7	80.7	68.8	37.5
Part time & unemployed	9.2	17.4	9.2	6.7	11.8	22.1
White Females						
NILF	79.6	63.9	52.8	43.9	61.8	53.1
Full time	14.2	22.4	37.7	39.9	27.7	40.8
Part time & unemployed	6.1	13.7	9.5	16.2	10.5	32.0
Nonwhite Females						
NILF	69.1	51.7	36.6	28.4	51.3	40.0
Full time	21.7	29.8	48.0	57.6	34.1	34.2
Part time & unemployed	9.2	18.5	15.4	14.0	14.6	29.2

SOURCE: Urban Employment Survey, conducted by the Bureau of the Census for the U.S. Department of Labor, 1969.

[a]Not in labor force.

TRAINING PROGRAMS AND LEVEL OF EDUCATION

Table 2 indicates the relationship between level of education and participation in training programs. In general, the proportion of participants increases with the level of formal education. This is true for all four groups through high school. It also applies to nonwhites with more than a high school education. Nonwhites who have attended college have either received more vocational training than whites prior to attendance or have taken more vocational rather than liberal arts courses in college. Nonwhite men at the high-school- and college-completion levels have also received more Armed Forces technical training than white men. This results from a disproportionately high rate of participation of black males in the armed forces. In general, a higher percentage of white than of nonwhite men participated in apprenticeship training; this form of skill training has not been as readily available to minority groups as to whites. The relatively high participation of the most educated nonwhite men in apprenticeship training may indicate that, in effect, nonwhites have to be more highly qualified than whites to obtain entry into this type of program.

LABOR FORCE STATUS AND TRAINING PROGRAMS

Tables 3 through 6 indicate labor force status by type of training program* and level of education for each of the four race-sex groups. Of particular interest are Tables 4 and 6, which provide information on nonwhite males and females, respectively. Overall participation in training programs increases labor force participation. This is particularly true for high school dropouts and high school graduates. However, training program participation does not necessarily lead to an increase in the proportion of trainees employed full time compared to the proportion of full time employees among nontrainees. This is

*Because white men and women provided few participants to each of the poverty programs, whites have been aggregated across all of these programs. Private and business programs and the "Other and Unknown" category, all of which are included among the special programs in Table 2, each had many white participants. Therefore, data on these two components are shown separately in Tables 3 and 5.

Table 2

TRAINING PROGRAM PARTICIPATION BY LEVEL OF EDUCATION, RACE AND SEX

Type of Training	Grade Completed							
	0-8		9-11		12		13+	
	No.	%	No.	%	No.	%	No.	%
White Males								
Untrained[a]	884	81.3	579	62.7	396	40.3	366	57.0
High school, trade school or J.C.[b]	43	4.0	100	10.8	200	20.4	97	15.1
Armed forces[b]	53	4.9	98	10.6	153	15.6	75	11.7
Apprenticeship[c]	88	8.1	103	11.1	168	17.1	62	9.7
Special programs[c]	20	1.8	44	4.8	65	6.6	42	6.5
Total	1088		924		982		642	
Nonwhite Males								
Untrained[a]	1886	81.1	1452	67.6	650	47.9	207	43.4
High school, trade school or J.C.[b]	98	4.2	200	9.3	245	18.1	95	19.9
Armed forces[b]	152	6.5	196	9.1	253	18.6	89	18.7
Apprenticeship[c]	90	3.9	95	4.4	109	8.0	50	10.5
Special programs[c]	99	4.3	205	9.6	100	7.4	36	7.5
Total	2325		2148		1357		477	
White Females								
Untrained[a]	1123	95.8	837	84.9	875	62.7	403	70.2
High school, trade school or J.C.[b]	36	3.1	109	11.0	437	31.3	134	23.4
Special programs[c]	13	1.1	40	4.1	83	6.0	37	6.4
Total	1172		986		1395		574	
Nonwhite Females								
Untrained[a]	2248	93.5	2322	80.7	1398	68.4	396	65.3
High school, trade school or J.C.[b]	77	3.2	252	8.8	430	21.0	158	26.1
Special programs[c]	79	3.3	302	10.5	216	10.6	52	8.6
Total	2404		2876		2044		606	

SOURCE: Urban Employment Survey, conducted by the Bureau of the Census for the U.S. Department of Labor, 1969.

[a]The size of the untrained group is understated because it was derived as a residual. Participants or completers in each program were added and the total deducted from the grand total of each race-sex group. This procedure yields a correct estimate of the untrained population only if no trainee participated in more than one program. Hence the undercount of the untrained population is equal to the number of multiple training program participants. Tests indicated that this number was small.

[b]Includes only those who have completed this program.

[c]Includes all participants, whether completers or not. These training programs include publicly financed poverty and retraining programs, entry level and upgrading training programs of private firms for their employees, and training programs not otherwise specified.

Table 3

LABOR FORCE STATUS BY LEVEL OF EDUCATION AND TRAINING PROGRAM

White Men (percentage)

Training Program and Labor Force Status	Grade Completed				All Schooling Levels
	0-8	9-11	12	13+	
Untrained					
NILF	46.1	24.5	20.7	25.4	32.5
Full time	46.7	57.4	71.7	58.5	55.9
Part time & unemployed	7.2	18.1	7.6	16.1	11.6
Vocational Schooling[a]					
NILF	30.2	14.0	11.0	7.2	12.7
Full time	65.1	76.0	80.5	87.6	79.6
Part time & unemployed	4.7	10.0	8.5	5.2	7.7
Armed Forces[b]					
NILF	26.4	7.1	6.5	6.7	9.5
Full time	67.9	83.7	90.2	85.3	84.4
Part time & unemployed	5.7	9.2	3.3	8.0	6.1
Apprenticeship[c]					
NILF	38.7	26.2	13.1	11.3	21.4
Full time	47.7	66.0	81.0	83.9	70.8
Part time & unemployed	13.6	7.8	5.9	4.8	7.8
Poverty Training Programs[d]					
NILF	25.0	18.2	--	--	10.3
Full time	75.0	72.7	88.9	100.0	82.8
Part time & unemployed	--	9.1	11.1	--	6.9
Private or Business Programs[e]					
NILF	20.0	18.2	--	6.7	8.3
Full time	80.0	63.6	94.1	86.6	83.4
Part time & unemployed	--	18.2	5.9	6.7	8.3
Other Training Programs[f]					
NILF	9.1	13.6	2.6	4.5	6.4
Full time	90.9	77.3	87.2	86.4	85.1
Part time & unemployed	--	9.1	10.2	9.1	8.5

SOURCE: Urban Employment Survey, conducted by the Bureau of the Census for the U.S. Department of Labor, 1969.

[a]Training programs completed in high school, trade school, or junior college.

[b]Training--other than basic training--completed in Armed Forces.

[c]Training received in apprenticeship program, whether completed or not.

[d]The programs consist of Upward Bound, Job Corps, Neighborhood Youth Corps, Community Action, Manpower Development and Training Act programs and all other publicly financed programs. All participants are included, whether they completed the program or not. Since the number of white participants (both male and female) in these programs is small, participants for these two race-sex groups have been grouped together.

[e]Entry level and upgrading training done by business firms for their employees. All participants included.

[f]Training programs not otherwise specified or unknown. All participants included.

Table 4

LABOR FORCE STATUS BY LEVEL OF EDUCATION AND TRAINING PROGRAM

Nonwhite Men (percentage)

Training Program and Labor Force Status	Grade Completed				All Schooling Levels
	0-8	9-11	12	13+	
Untrained					
NILF	31.4	18.8	10.3	21.3	23.2
Full time	60.1	64.9	81.4	72.4	65.8
Part time & unemployed	8.5	16.3	8.3	6.3	11.0
Vocational Schooling[a]					
NILF	13.3	7.5	6.1	5.3	7.5
Full time	75.5	74.0	85.3	87.3	80.6
Part time & unemployed	11.2	18.5	8.6	7.4	11.9
Armed Forces[b]					
NILF	27.0	13.3	3.2	5.6	11.6
Full time	63.8	74.5	87.7	89.9	79.0
Part time & unemployed	9.2	12.2	9.1	4.5	9.4
Apprenticeship[c]					
NILF	15.6	16.9	7.3	6.0	11.9
Full time	72.2	74.7	83.5	88.0	78.8
Part time & unemployed	12.2	8.4	9.2	6.0	9.3
Upward Bound & Job Corps[d]					
NILF	40.0	16.1	12.5	50.0	21.6
Full time	40.0	54.9	75.0	50.0	54.9
Part time & unemployed	20.0	29.0	12.5	--	23.5
Neighborhood Youth Corps[d]					
NILF	20.0	24.6	8.3	33.3	22.3
Full time	30.0	34.8	66.7	33.3	38.3
Part time & unemployed	50.0	40.6	25.0	33.3	39.4
Other Federal Programs[d]					
NILF	50.0	19.0	31.3	--	29.6
Full time	42.9	42.9	56.2	66.7	48.2
Part time & unemployed	7.1	38.1	12.5	33.3	22.2
State, Local, & Community[d]					
NILF	22.2	20.0	--	--	14.3
Full time	33.3	40.0	85.7	100.0	53.6
Part time & unemployed	44.5	40.0	14.3	--	32.1
Private or Business Programs[e]					
NILF	15.4	5.9	--	--	7.0
Full time	76.9	70.6	84.2	71.4	75.4
Part time & unemployed	7.7	23.5	15.8	28.6	17.6
Other Training Programs[f]					
NILF	25.6	17.8	13.2	--	16.7
Full time	65.1	56.0	68.4	94.4	66.0
Part time & unemployed	9.3	26.2	18.4	5.6	17.3

SOURCE: Urban Employment Survey, conducted by the Bureau of the Census for the U.S. Department of Labor, 1969.

NOTE: Footnotes a, b, c, e, and f correspond to those in Table 3.

[d] All participants included.

Table 5

LABOR FORCE STATUS BY LEVEL OF EDUCATION AND TRAINING PROGRAM

White Women (percentage)

Training Program and Labor Force Status	Grade Completed				All Schooling Levels
	0-8	9-11	12	13+	
Untrained					
NILF	80.8	65.8	56.6	42.7	65.6
Full time	13.5	21.4	33.0	38.7	24.0
Part time & unemployed	5.7	12.8	10.4	18.6	10.4
Vocational Schooling[a]					
NILF	55.5	56.9	49.0	47.8	50.3
Full time	27.8	27.5	43.0	42.5	39.8
Part time & unemployed	16.7	15.6	8.0	9.7	9.9
Poverty Training Programs[b]					
NILF	100.0	66.7	30.0	25.0	42.3
Full time	--	--	60.0	50.0	38.5
Part time & unemployed	--	33.3	10.0	25.0	19.2
Private or Business Programs[c]					
NILF	33.3	40.0	32.1	54.5	38.6
Full time	66.7	53.3	60.7	36.4	54.4
Part time & unemployed	--	6.7	7.2	9.1	7.0
Other Training Programs[d]					
NILF	37.5	36.8	35.6	44.4	37.8
Full time	37.5	21.1	57.8	44.4	45.5
Part time & unemployed	25.0	42.1	6.6	11.2	16.7

SOURCE: Urban Employment Survey, conducted by the Bureau of the Census for the U.S. Department of Labor, 1969.

[a]Training programs completed in high school, trade school, or junior college.

[b]All participants included.

[c]Entry level and upgrading training done by business firms for their employees. All participants included.

[d]Training programs not otherwise specified or unknown. All participants included.

Table 6

LABOR FORCE STATUS BY LEVEL OF EDUCATION AND TRAINING PROGRAM

Nonwhite Women (percentage)

Training Program and Labor Force Status	Grade Completed				All Schooling Levels
	0-8	9-11	12	13+	
Untrained					
NILF	70.2	54.8	40.0	30.0	55.4
Full time	20.9	29.1	45.1	55.6	31.4
Part time & unemployed	8.9	16.1	14.9	14.4	13.2
Vocational Schooling[a]					
NILF	44.1	38.9	28.6	24.7	32.1
Full time	39.0	36.5	56.5	63.9	50.8
Part time & unemployed	16.9	24.6	14.9	11.4	17.1
Upward Bound & Job Corps[b]					
NILF	75.0	48.3	29.4	20.0	41.8
Full time	--	17.2	64.7	60.0	34.6
Part time & unemployed	25.0	34.5	5.9	20.0	23.6
Neighborhood Youth Corp[b]					
NILF	75.0	39.2	19.1	37.5	36.6
Full time	16.7	24.5	61.9	37.5	34.1
Part time & unemployed	8.3	36.3	19.0	25.0	29.3
Other Federal Programs[b]					
NILF	63.6	34.5	31.3	16.7	35.9
Full time	27.3	24.1	43.7	50.0	34.6
Part time & unemployed	9.1	41.4	25.0	33.3	29.5
State, Local, & Community[b]					
NILF	75.0	38.5	46.7	33.3	52.3
Full time	8.3	34.6	40.0	50.0	29.2
Part time & unemployed	16.7	26.9	13.3	16.7	18.5
Private or Business Programs[c]					
NILF	25.0	33.3	44.0	37.5	37.5
Full time	50.0	33.3	44.0	37.5	39.1
Part time & unemployed	25.0	33.3	12.0	25.0	23.4
Other Training Programs[d]					
NILF	58.4	31.5	29.4	21.1	34.1
Full time	33.3	41.6	47.1	68.4	44.5
Part time & unemployed	8.3	26.9	23.5	10.5	21.4

SOURCE: Urban Employment Survey, conducted by the Bureau of the Census for the U.S. Department of Labor, 1969.

[a]Training programs completed in high school, trade school, or junior college.

[b]All participants included.

[c]Entry level and upgrading training done by business firms for their employees. All participants included.

[d]Training programs not otherwise specified or unknown. All participants included.

particularly true of the programs designed for youthful male participants. The explanation for this could be twofold: (1) youths experience certain disadvantages in the labor market; and (2) the purpose of such programs as the Neighborhood Youth Corps and Upward Bound is to increase the level of educational attainment as preparation for employment rather than obtaining immediate full-time work.

The success of nonwhite female trainees in obtaining full-time employment is somewhat greater than that of nonwhite males.

In summary then it seems fair to say that entry into the labor force is enhanced by training program participation. Success in obtaining full-time employment differs between the sexes and between training programs. The reader is reminded that this is a cross-sectional analysis, which does not provide information on the trainees pretraining employment history. Hence, no conclusion can be drawn with respect to the individual trainee's improvement or lack of it.

We now turn to an analysis of earnings of full-time employed persons. This enables us to take into account not only training-program participation and level of education but also to control for other factors such as age, occupation, and industry of employment.

IV. THE DETERMINANTS OF ANNUAL EARNINGS AND NUMBER OF WEEKS WORKED

Two linear multiple regression models are used to determine which factors have affected earned income and the number of weeks worked during the 12 months preceding the survey. Although the dependent variables differ, most of the independent variables are the same for both models.

THE REGRESSION MODELS

Earned income is a function of age, level of education, occupation, industry of employment, training program participation, and personal characteristics such as race and sex. This function has the general form

$$Y = F(A, E, O, I, R, S, T, W),$$

where Y = income earned during the 12 months preceding the survey
A = age
E = level of education
O = occupation
I = industry of employment
R = race
S = sex
T = part participation in training programs
W = weeks worked during the preceding 12 months.

All variables, except the income variable, are binary, including level of education and age. For example, each individual has been classified into the following educational groups: 0-4, 5-8, 9-11, 12, and 13 or more grades. The lowest educational group is, in effect, treated as the base and included in the constant term. Therefore, the coefficient for the 5-8 grade completion group represents the additional annual income that a person with that level of education would have compared to the income of a person with the lowest level of educational attainment. Likewise, the coefficient for the 9-11 grade

mpletion level represents the additional income that a person schooled to that level would have over a person in the lowest educational group. The income attributed to the lowest age group, 16-17 year olds, is also specified in the constant term with the coefficient for each higher age group representing the increase in annual income over that earned by the lowest age group. Because the sample is divided into the four groups, race and sex are, for all practical purposes, treated as separate variables.

Finally, the model also includes a term measuring the interaction between training programs and specified levels of educational attainment. This allows the analyst to determine (1) whether an individual's income increases with enrollment in a training program; and (2) the effect upon income that each training program has when combined with a specific level of educational attainment.

In summary, the form of the equation used in the analysis is

$$Y_i = a + b_1A + b_2E + b_3O + b_4I + b_5T + b_6W + b_7ET$$

where Y_i = the income of an individual in the ith race-sex group

a = the constant term

ET = the interaction term for a specific level of grade completion and a given training program.

In the regressions used to determine factors affecting weeks worked, W becomes the dependent variable. In addition, ET, the interaction term for training programs and level of education, is eliminated because it proved insignificant in the income regression. Given limitations on time and resources, further experimentation with the interaction variable did not seem warranted.

The linear form of the second set of regressions is

$$W_i = a + b_1A + b_2E + b_3O + b_4I + b_5T$$

where W_i = the number of weeks worked by an individual in the ith race-sex group.

THE DETERMINANTS OF ANNUAL EARNINGS

The following determinants of income are all significant for each of the race-sex groups: (1) age; (2) schooling; (3) number of weeks worked; and (4) certain occupations and industries of employment. None of the training programs or their interaction with level of education proved significant. This applies to the traditional as well as the poverty training programs. Table 7 presents the estimated regression coefficients for all four race-sex groups.

For each group, income increases with age up to age 44. At later ages, women still experience some increase, although by much smaller magnitudes than during their earlier working years. The age coefficients for white men are the highest and show the greatest rate of increase. Those for nonwhite men are considerably lower and their rate of increase is smaller. The coefficients for women are generally much lower than for men, and, as expected, there is a considerable differential between the races.

The earnings of youth are, as one might expect, generally quite low. However, the earnings of 18 and 19 year olds are not significantly higher than the earnings of 16 to 17 year olds; for whites, the earnings of 20 to 24 year olds are also not significantly greater than the earnings of younger white employees. The principal explanation for this low level of earnings for youth lies in the fact that young persons are not employed for as many weeks of the year as older employees.

Schooling also has a significant positive impact on earnings, but not at all levels of educational attainment. Persons who have completed between the fifth and the eighth grades in school do not earn significantly higher incomes than persons with 4 years or less of schooling. Even the earnings of white male and nonwhite female high school dropouts are not significantly higher than those of the least educated members of their race-sex groups. For higher levels of education, however, income is highly related to level of education. Beginning with the high school diploma, the effect of increased grade completion upon income is positive and highly significant for all four race-sex groups. Moreover, the level of educational attainment appears to add more to white than to nonwhite incomes. The gains from

Table 7

THE DETERMINANTS OF INCOME -- REGRESSION RESULTS

Independent Variable	White Males		Nonwhite Males		White Females		Nonwhite Females	
	Estimated Coefficient	Standard Error	Estimated Coefficient	Standard Error	Estimated Coefficient	Standard Error	Estimated Coefficient	Standard Error
Age								
18-19	459	1014.5	-176	457.0	283	591.7	36	330.1
20-24	1087	925.4	926	441.8***	410	549.2	658	309.8**
25-34	2871	913.3***	1896	439.1***	1287	552.3**	1169	308.4***
35-44	3951	914.6***	2556	440.7***	1538	548.2***	1237	309.5***
45-54	3526	908.7***	2414	444.7***	1671	544.5***	1296	314.0***
55-64	3048	913.1***	2241	454.1***	1539	555.1***	1314	332.4***
Schooling (grades completed)								
5-8	709	578.9	230	202.0	623	563.7	72	247.8
9-11	963	597.7	565	206.4***	951	557.0*	282	244.6
12	1752	598.3***	987	216.9***	1180	559.5**	449	248.8*
13 and over	2987	642.7***	1934	279.2***	2392	588.1***	1455	273.8***
Occupation								
Professional	148	528.8	-1	511.3	1234	412.9***	1180	294.3***
Managerial	1151	502.0**	-90	483.0	1550	443.0***	124	279.8
Clerical	-1749	519.9***	-1367	432.7***	779	336.8**	-211	251.5
Foremen	-93	480.2	-415	422.1				
Operatives	-1568	476.8***	-1166	414.7***	600	396.3	-233	260.8
Laborers	-2634	572.4***	-1438	425.6***				
Private Household Workers	--	--	--	--	-1019	685.9	-1622	331.5***
Other Services	-1813	554.8***	-1864	427.2***	-50	358.4	-550	254.3**

Table 7 (cont'd)

Independent Variable	White Males		Nonwhite Males		White Females		Nonwhite Females	
	Estimated Coefficient	Standard Error	Estimated Coefficient	Standard Error	Estimated Coefficient	Standard Error	Estimated Coefficient	Standard Error
Industries								
Construction and Utilities	786	779.3	-210	409.7	306	403.8	117	176.4
Durable Goods	1277	767.3*	356	403.2	1222	423.4***	588	205.4***
Non-durable Goods	960	819.4	-694	416.6*	374	470.3	74	211.3
Wholesale & Retail Trade	-233	789.9	-917	410.6**	94	401.0	-267	184.6
Finance	-123	890.0	-1155	507.6**	-150	438.8	231	247.9
Personal & Business Services	-714	842.3	-1096	434.4**	-331	450.9	-386	195.4**
Education & Other Professions	62	841.9	1059	539.0**	870	455.4*	1207	230.0***
Public Administration	1293	852.7	-143	444.8	1582	582.6***	560	211.6***
Weeks Worked								
1-26	-4887	392.5***	-3935	190.4***	-3080	244.1***	-2434	113.1***
27-47	-1858	254.1***	-1235	131.4***	-1361	198.5***	-905	100.7***
48-49	-941	396.4**	-415	196.5**	-297	353.4	-312	167.3*

Table 7 (cont'd)

Independent Variable	White Males		Nonwhite Males		White Females		Nonwhite Females	
	Estimated Coefficient	Standard Error	Estimated Coefficient	Standard Error	Estimated Coefficient	Standard Error	Estimated Coefficient	Standard Error
Constant	4576		5463		1449		2867	
Mean	8592		6411		4528		3802	
R^2	0.30		0.29		0.38		0.38	
F Value	14.6		25.0		14.2		28.6	

*Significant at the 10-percent level. The absence of an asterisk indicates insignificance at usual levels of confidence.

**Significant at the 5-percent level.

***Significant at the 1-percent level.

education are surprisingly small for nonwhite women. Although the differential between the races for both men and women is substantial college attendance narrows the income differential based on race by adding relatively more to nonwhite than to white incomes.

The size and significance of the relationship between income and industry and occupation also varies with race and sex. Industry of employment tends to be a less important determinant of income for white men than for other segments of the population. (White men show a positive and significant coefficient for the durable goods industry only. Even then, this coefficient is significant at only the 10-percent level.) Employment in the durable goods industry, public administration, and education and other professions adds significantly to the incomes of nonwhites. White women, by contrast, have significantly higher incomes when employed in education and other professions and in public administration and durable goods manufacturing; they have lower incomes when employed in the nondurable goods industry, wholesale and retail trade, finance, and personal and business services.

The relationship between income and occupation differs both for the sexes and the races. There are three distinct classes of occupations for white men. In the highest income class are the managers. Then come professional workers and foremen, and, finally, clerical workers, operatives, laborers, and other service workers. By contrast, for nonwhite men there are only two income-occupation classes. Nonwhite managers are indistinguishable, in terms of income at least, from nonwhite professionals and foremen. For white women there are also two distinct income-occupation classes. The higher class includes professional women and managerial and clerical workers; the lower, all other white female employees. For nonwhite women, only professionals form a distinct upper class, while nonwhite women employed as household and service workers are in the lowest class by themselves. All other occupations fall into an intermediary group.

Most persons in all four race-sex groups were employed full time throughout the 52-week period.* Still, we must use the number of weeks

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*The percentages of persons surveyed who worked full time during the 12-month period were: white men, 76 percent; nonwhite men, 72 percent; white women, 69 percent; nonwhite women, 67 percent.

worked during the previous year to standardize for variations in earnings because of unemployment during the 12 months prior to the survey. Not surprisingly, the coefficients for weeks worked are generally large and highly significant; the shorter the period of full-time employment, the lower the annual earnings.

A comparison of the mean incomes and constants for each race-sex group suggests that the incomes of whites vary much more about their means than do incomes for nonwhites. This is a reflection of several things, particularly the fact that age and education affect the income of white males and females more than is the case for each of the two nonwhite groups.

From the regression results presented in Table 7, it is difficult to visualize the precise magnitude of the income disadvantage experienced by women and nonwhites. For this reason, we have postulated four hypothetical representative employees based on these results. The incomes of these four individuals are presented in Table 8. All four employees are assumed to be between 25 and 34 years old and employed full time during the 12 months prior to the survey. Employee #1 has had no more than a grammar school education and is employed as a worker in personal and business services. Employee #2 has had some high school education, but did not graduate. He is an operative in the durable goods industry. Employee #3 has had 4 years of high school education and is a clerical worker in public administration, while Employee #4 has had some college education and is a professional engaged in education or some other professional service. The question to be answered is: Would each of these employees' incomes vary with race and sex and, if so, by how much?

Clearly, there are significant differences between the incomes of both whites and nonwhites, and men and women. The gap between the incomes of white and nonwhite males is greatest for employees #1 and #3; for females, employees #2 and #3. For the highest classes of employees, the income differential based on race appears to be at a minimum with the nonwhite female earning more than the white. By contrast, the gap between the incomes of men and women by race is more or less the same for all four employees. The reader should remember that the differences

Table 8

ESTIMATED ANNUAL INCOMES OF FOUR REPRESENTATIVE WORKERS

(dollars)

Description of Employees	White Male	Nonwhite Male	White Female	Nonwhite Female
Employee #1				
Age: 25-34	$ 2871	$ 1896	$1287	$1169
Education: 5-8 grade	709	230	623	72
Occupation: Service Workers	-1813	-1864	-50	-550
Industry: Personal & Business Services	-714	-1096	-331	-386
Constant	4576	5463	1449	2867
Total	$ 5629	$ 4629	$2978	$3172
Employee #2				
Age: 25-34	$ 2871	$ 1896	$1287	$1169
Education: 9-11 grade	963	565	951	282
Occupation. Operative	-1568	-1166	600	-233
Industry: Durable Goods Manufacture	1277	356	1222	588
Constant	4576	5463	1449	2867
Total	$ 8119	$ 7114	$5509	$4673
Employee #3				
Age: 25-34	$ 2871	$ 1896	$1287	$1169
Education: 12 grade	1752	987	1180	449
Occupation: Clerical	-1749	-1367	779	-211
Industry: Public Administration	1293	-143	1582	560
Constant	4576	5463	1449	2867
Total	$ 8743	$ 6836	$6277	$4834
Employee #4				
Age: 25-34	$ 2871	$ 1896	$1287	$1169
Education: 13 & Over	2987	1934	2392	1455
Occupation: Professional	148	-1	1234	1180
Industry: Education & Other Professional Services	62	1059	870	1207
Constant	4576	5463	1449	2867
Total	$10644	$10351	$7232	$7878

in income by race and sex remain *after* holding constant other factors such as level of education, age, and industry and occupation of employment. Hence, the evidence is strong that discrimination by both race and sex has a major impact on income differentials in Chicago.

Although none of the training program or interaction coefficients are significant, these coefficients are, nonetheless, presented in Table 9.* For men, there appears to be some positive interaction between level of education and participation in training programs. Except for apprenticeship, the coefficients of the interaction variable tend to increase with the level of education for white men up to high school completion. Yet, it must be stressed, once again, that all of these coefficients are statistically insignificant. These results provide, at best, only vague intimations and certainly no solid evidence that training programs have increased the income of participants above those of their cohort with similar personal and employment attributes. It must be stressed again, however, that to the extent to which such programs as the Neighborhood Youth Corps and Upward Bound accomplished their stated purpose of raising the level of educational attainment of participants, they did increase the participants' incomes above the level the incomes would have been if the educational deficit had not been remedied. The fact that it did not increase the income of the trainees above the level of other similarly educated persons in the same occupations and industries is not, in itself, an indictment of these programs. This consideration highlights the statement previously made that without a pre- and post-training earning test we do not know whether these programs have succeeded in altering the earning stream of individuals over time.

NUMBER OF WEEKS WORKED

Table 10 presents the results of the regression analysis for number of weeks worked. The explanation of variance in number of weeks worked is rather low for all four race-sex groups; the independent

*Table 9 does not present the results of a different set of regressions, but rather coefficients that were omitted from Table 7 because they were insignificant.

Table 9

ESTIMATED COEFFICIENTS EXPRESSING INCOME AS A FUNCTION OF PARTICIPATION IN TRAINING PROGRAMS

Training Program Plus Level of Education	White Males	Nonwhite Males	White Females	Nonwhite Females
Vocational	-13	724	810	-197
Plus: 5-8	2708	-331	-1414	436
9-11	-185	-459	-312	305
12	49	-505	-318	457
13+	-1114	-97	-796	837
Armed Forces	1128	-180	NA	NA
Plus: 5-8	-1086	189	NA	NA
9-11	-226	811	NA	NA
12	-304	568	NA	NA
13+	-202	426	NA	NA
Apprenticeship	755	-131	NA	NA
Plus: 5-8	-451	285	NA	NA
9-11	179	743	NA	NA
12	-317	760	NA	NA
13+	-1584	848	NA	NA
Private and Business Training Programs	167	-83	-268	-134
Plus: 5-8	-1504	-834	2751	1086
9-11	-1645	-992	-1009	-590
12	1414	-219	868	933
13+	1393	-1064	556	-1015
Others and Unknown	-947	-994	1259	-391
Plus: 5-8	3803	905	-649	98
9-11	-879	119	-1635	335
12	1652	1082	-1308	15
13+	352	-288	-1605	-252
Neighborhood Youth Corps	-2758	-765	NA	-1088
Plus: 5-8	NA	1723	NA	1606
9-11	484	149	NA	1366
12	2724	215	NA	1101
13+	-4636	1693	NA	-1051
Federal and State Programs	-2477	-830	-3782	-3225
Plus: 5-8	3803	994	NA	1458
9-11	2400	339	NA	2733
12	4268	2322	3641	2751
13+	1116	-298	3800	1675
Upward Bound and Job Corps	NA	-889	NA	-875
Plus: 5-8	NA	1197	NA	NA
9-11	NA	-326	NA	691
12	NA	487	NA	1607
13	NA	963	NA	-272

Table 10

THE DETERMINANTS OF WEEKS WORKED -- REGRESSION RESULTS

Independent Variable	White Males		Nonwhite Males		White Females		Nonwhite Females	
	Estimated Coefficient	Standard Error	Estimated Coefficient	Standard Error	Estimated Coefficient	Standard Error	Estimated Coefficient	Standard Error
Age								
18-19	13.5	2.1***	9.2	1.3***	11.9	2.9***	6.6	2.1***
20-24	15.7	1.9***	18.7	1.2***	20.7	2.7***	13.2	2.0***
25-34	21.9	1.9***	24.0	1.2***	21.6	2.7***	17.9	1.9***
35-44	23.8	1.9***	24.7	1.2***	24.6	2.6***	20.4	2.0***
45-54	22.8	1.9***	26.0	1.2***	26.1	2.6***	22.0	2.0***
55-64	23.1	1.9***	25.5	1.2***	28.3	2.6***	24.1	2.2***
Occupation****								
Professional	0.3	1.2	3.0	1.8*	2.5	2.1	0.1	2.1
Managerial	1.0	1.2	3.6	1.7**	1.7	2.3	0.1	2.8
Laborers	-3.7	1.3***	-0.3	1.5	-1.2	2.0	-0.1	1.9
Industries*****								
Durable Goods	1.9	1.6	3.6	1.4***	-0.3	2.3	-0.5	1.5
Nondurable Goods	0.9	1.7	4.5	1.4***	0.3	2.5	-2.0	1.6
Wholesale & Retail Trade	1.1	1.6	4.2	1.4***	-1.7	2.1	-1.5	1.4
Finance	1.7	1.9	3.1	1.8*	0.9	2.3	3.4	1.9*
Business & Personal Services	0.2	1.8	3.0	1.5**	-2.6	2.4	-0.8	1.5
Public Administration	2.4	1.8	6.1	1.5***	-1.2	3.0	2.1	1.6

Table 10 (cont'd)

Independent Variable	White Males		Nonwhite Males		White Females		Nonwhite Females	
	Estimated Coefficient	Standard Error	Estimated Coefficient	Standard Error	Estimated Coefficient	Standard Error	Estimated Coefficient	Standard Error
Training Programs								
Vocational Schooling	-0.4	0.6	0.8	0.5*	0.3	0.9	0.6	0.7
Armed Forces	-0.8	0.6	-0.5	0.5	NA	NA	NA	NA
Apprenticeship	-0.3	0.6	-0.6	0.7	NA	NA	NA	NA
Private & Business Programs	1.7	1.6	-1.7	1.6	2.0	2.4	-2.5	2.6
Other & Unknown	-1.5	1.1	-2.6	1.0**	0.5	2.0	-2.7	1.4*
Neighborhood Youth Corps, Job Corps, & Upward Bound	3.8	5.7	-2.3	1.8	NA	NA	-0.7	2.9
Other Federal, State & Local Programs	-4.2	2.3*	-4.8	1.5***	1.9	4.2	-1.5	1.9
Education								
5-8 Grades	-0.3	1.3	0.3	0.7	-1.7	2.9	0.3	1.9
9-11 Grades	0.3	1.3	-0.3	0.7	-2.7	2.9	-1.4	1.9
12 Grades	1.6	1.3	1.1	0.7	-1.7	2.9	0.9	1.9
13 & More Grades	0.6	1.4	0.3	0.9	-2.8	3.1	1.3	2.0

Table 10 (cont'd)

Independent Variable	White Males		Nonwhite Males		White Females		Nonwhite Females	
	Estimated Coefficient	Standard Error	Estimated Coefficient	Standard Error	Estimated Coefficient	Standard Error	Estimated Coefficient	Standard Error
Constant	24.8		17.9		23.4		25.4	
Mean	47.2		45.7		44.5		42.3	
R^2	0.15		0.22		0.17		0.13	
F Value	13.4		39.7		8.4		14.5	

*Significant at the 10-percent level. The absence of an asterisk indicates no statistical significance.

**Significant at the 5-percent level.

***Significant at the 2-percent level.

****Significant coefficients only.

variables explain only 13 to 22 percent of total variance. However, we are not concerned as much with the explanatory power of the model as with the significance of the coefficients.

Without exception, age is the most important factor explaining variation in full-time employment or, conversely, the incidence of unemployment. For all four race-sex groups, the amount of time worked increases sharply with age until it reaches a plateau at, roughly, the 25th year. Whites tend to reach an age of full employment sooner than nonwhites.

The level of schooling, surprisingly, does not appear to influence the number of weeks worked for persons usually employed full time.* The importance of age and the nonimportance of schooling suggest a labor market in which there are employment opportunities for low-skilled labor that do not require high levels of education. It also suggests that, in a time of relatively full employment, the solution to unemployment or underemployment is, quite simply, growing up.

Industry of employment is again important for nonwhite men, but insignificant for white men and, generally, for women. By and large, occupation appears to have little impact on weeks worked. There are some exceptions. White male laborers work significantly fewer weeks per year than other white male employees. Nonwhite men filling professional and managerial jobs appear to work more weeks per year than other nonwhite men.

Training programs have little effect on the number of weeks worked. Vocational training may have some impact on the employment of nonwhite men, but not much. If the data are to be believed, other training programs actually have a negative impact on nonwhite employment. This may reflect, however, the fact that the "other" programs focus on hard-core unemployed who, for reasons not considered in the model, find it difficult to obtain and keep full-time jobs.

In summary, age is the most important factor affecting both income and the number of weeks worked for all four race-sex groups. Schooling has an impact on income, but not on the number of weeks worked durin,

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*The survey data relate to work experience in 1968 and 1969, years of relatively full employment.

the year. Training programs have no effect on income and little discernible effect upon the number of weeks worked. For nonwhite men, the industry of employment plays a significant role in determining income as well as the number of weeks worked. For other groups, however, industry affects income alone. Similarly, occupation also has an impact on income, but not on weeks worked.

In short, the analysis would seem to suggest that unemployment in Chicago in 1968 and 1969 was largely a problem of youth, while income differentials were due very largely to differences based on age, race, and sex. There is support, in other words, for the belief that discrimination has been a major factor affecting income differentials.

V. CONCLUSIONS AND POLICY IMPLICATIONS

This study has dealt with the determinants of income among a predominantly low-income population sample. The period covered by the data base was the fiscal year 1969, a year of relatively high employment for the geographical areas included in the survey. The full-time workers included in the regression analysis on income and weeks employed have worked full-time throughout most of that year. Yet the mean income of all four sex-race groups has been low. Hence, the most important question is how the mean incomes of these population groups can be raised.

It has been demonstrated that the training programs have not been effective in raising the income level of participants above those of nonparticipants with the same personal and employment attributes. As pointed out previously, this is not in itself an indictment of these programs since the data is not available to control for pre- and post-training income. It is possible that these programs, partly by paving the way for the trainees' entry into the labor force, have succeeded in raising trainee incomes to the level of the nontrainee cohort. But they have not succeeded in raising incomes to a *higher* level. Given the training program population and the relative novelty of many of them, this may be too much to expect in any case. However, the problem remains of raising the average income of this type of population.

Three factors affect the income for all race-sex groups: age, level of education, and occupation. Industry of employment plays a significant role for nonwhite males and females. It is obvious from this study as well as from others that the high school graduate has a higher income than the dropout. In all probability this fact reflects employers' preferences--a sheepskin effect--as well as a higher skill level for graduates than for nongraduates. The obvious policy implication therefore is to increase the retentive power of the school system. Yet this recommendation is too broad to be useful. What is needed is a study of successful (in terms of retention) as compared to not-so-successful school programs. Should vocational high school programs be

enlarged? What skills should be taught? Should the number of school-years required for graduation be shortened? All these questions are important but beyond the scope of this report.

The earnings differentials by race are a clear indication of discrimination when all other personal and employment attributes are controlled for. Typically, the industries in which discrimination occurs, either because of union or management practices, provide the highest incomes and the most stable employment. The fact that employment in the public sector (e.g., education and public administration) benefits nonwhites, particularly males, more than employment in other industries suggests that government employment is an important avenue of advancement for minority groups. The state government should further its efforts to increase employment of these groups in all occupations. Besides benefiting the minority groups directly this would also demonstrate to private employers that racially restrictive practices are costly because they restrict the available labor supply.

In summary, three policy oriented approaches are needed. The first of these is a closer look at the current structure and success over time of the different training programs; the second, an examination of the retentive powers of various school programs. Finally, all methods of eliminating racial discrimination have to be explored. Without the hope of obtaining reasonably well-paying jobs that offer chances for advancement, the large minority populations in cities like Chicago lack the motivation to acquire skills for which majority members are currently well rewarded.

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